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ABSTRACT

This study aims to explore leadership characteristics and contribute evidence to the validity of Jungian personality typology by investigating the relationship between principals' personality types and their reported problem-solving strategies. To test the hypothesis that the manner in which the principals report that they would solve a problem would be characteristic of their psychological types, the Myers-Briggs Type Indicator (MBTI) and the Principal Problem Strategy Questionnaire (PPSQ) were administered to 86 principals. The MBTI was scored for preferences in perceiving (sensing or intuitive) and judging (thinking or feeling) functions to generate a psychological type score. The PPSQ consists of 12 problem situations for which principals described what action they themselves would take. Answers to the PPSQ were coded for the respondent's psychological type functions based on MBTI results, and six Q-sorters independently classified PPSQ responses by characteristics of psychological types. Results indicate that perceived problem-solving strategies of sensing and intuitive type and thinking and feeling type principals are significantly different, and that the principals studied overwhelmingly perceived and judged problem situations according to their psychological type characteristics. It is concluded that if reported strategies reflect actual strategies, psychological type is a major determinant of leader behavior. (MLF)

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A STUDY OF THE RELATIONSHIP BETWEEN ELEMENTARY SCHOOL
PRINCIPALS' PSYCHOLOGICAL TYPE AND PERCEIVED
PROBLEM-SOLVING STRATEGIES

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Rationale

The elementary school principalship is a middle management position. The principal must administer his or her school under the "umbrella" of general school board policy. Even though each principal in a particular school district operates under the same set of policies, each has a certain amount of autonomy. In fact, some of the more recent theories of school organizations view the school district as "loosely coupled" organizations (March & Olsen, 1976; Weick, 1976). This means that subunits, central office, and individual schools, are relatively independent of one another and are not controlled as directly by the level above them in the hierarchy as authoritarian bureaucracy theory would indicate. In any case, the elementary school principal has a fair amount of latitude in determining how to administer the school.

It is the assumption of this researcher that the manner in which each principal interprets and implements board policy goes a long way toward determining the unique nature of each school. Further it is assumed that the rules, regulations and procedures established by the principal for the operation of the school are greatly influenced by each principal's perception of his or her leadership role as elementary school principal.

It has been established that there is an inherent complexity and variety in the way that the principal performs his or her role (Lipham and Hoeh, 1974; March, 1978). It is the underlying hypothesis of this study that some of this variety is due to the differences in personality traits of the principals. Although there are a variety of tasks associated with the role, the tasks of responding to problem situations seem to be generic to the principalship. It is this task that is central to this research. It is hypothesized therefore that the manner in which the principals perceive that they would respond to a problem situation would be characteristic to their psychological types.

Background

The literature clearly supports the notion that the elementary school principal holds a key position in the school's success (Lipham, 1981; Henthorn, 1980; Brookover et al., 1979; Goodlad and Klein, 1974; Blumberg and Greenfield, 1980). Studies of school effectiveness have focused on many characteristics such as school social systems, school goals and objectives, and attitudes and norms (Brookover et al., 1979; Squires, 1980; Wynne, 1980). Henthorn, in his review of school effectiveness studies, reports that the research has shown that the principal's leadership is a key factor in the success of the school.

Sarason (1974) concludes that principals are aware that they are part of a very complex, if not incomprehensible, arrangement of roles and functions. Sarason believes that the manner in which the principal feels his or her behavior is related to external forces or internal forces is an important factor in determining how they behave. Wayson (1974) contends that much of what constitutes leadership behavior in a role such as the principalship is facilitated or retarded by personal factors--knowledge, skills, attitudes, preferences and habits. He maintains, like Sarason, that the constraints on the principal arise primarily from the way one chooses to view one's self, the world, and one's role.

It is these differences in which an elementary school principal chooses to "view one's self, his or her world, and his or her role" and the effects of these views on a principal's perceived leadership behavior that is the focus of this study.

Even though leadership has been studied for almost 200 years, much remains a mystery about this phenomenon. Stogdill (1974) and Korman (1966) in their extensive reviews of leadership research have reported that most of the results are inconclusive and often conflicting.

One of the earliest approaches to the study of leadership was the trait approach. The underlying notion of this approach was that some persons are "born leaders," that is, that they possess certain traits that make them uniquely qualified to lead.

Most of the early leadership trait studies compared leaders with non-leaders to see what differences existed with respect to physical characteristics, personality, and ability. Some studies focused on traits of successful leaders as compared with less successful leaders. Trait research has been reviewed by various scholars (Gibb, 1954; Mann, 1959; Stogdill, 1948, 1974) and in general, the studies reviewed failed to support the basic premise of the trait approach: the assumption that a person must possess certain traits in order to be a successful leader. Although some traits seem to be relevant for some kinds of leaders, these traits did not seem relevant to others. A leader with certain traits could be effective in one situation, but ineffective in another. In addition, two leaders with different patterns could be successful in the same situation.

In light of the previous studies, it may seem that to initiate a study to investigate leader personality characteristics would be folly, however, as Yukl (1981) points out, leadership researchers may have overreacted to the earlier pessimistic literature reviews by rejecting the relevance of traits altogether. This is evidenced by Stogdill (1974, p. 72) who states that:

The reviews by Bird, Jenkins, and Stogdill have been cited as evidence in support of the view that leadership is entirely situational in origin and that no personal characteristics are predictive of leadership. This view seems to overemphasize the situational, and underemphasize the personal nature of leadership.

This is not to suggest a return to the "natural leader" approach, but rather an approach that supports the notion that certain traits increase the likelihood that a leader will behave in a particular way. There are too many

contingencies surrounding the leadership process to assure that these traits will control the situation. The effect of these different traits may be dependent somewhat upon the nature of the leadership situation. However, since we have an incomplete picture of the processes underlying the complexity and dynamics of leadership, a study of the relationship of certain personality characteristics and perceived leadership behavior seems useful in helping to "unravel this puzzle."

The personality characteristic studied in this research is the personality trait that deals with preferences of how one "deals with his or her world." A theory that describes this aspect of the personality was developed by Carl G. Jung.

Jung's theory of psychological types (1923) is concerned with preferences people have in using their mental processes. He described various personality functions and attitudes that are basic in the way we prefer to deal with our world. As we have grown up, we have made choices as to how we would like to live our lives. These choices have resulted in the formation of preferences. Our preference for a particular function or attitude, in turn, is characteristic and is referred to as our psychological type.

The basic preferences that Jung alludes to are centered on the way people prefer to perceive the world and the way they prefer to make judgments. Perceiving is defined as being, "the process of becoming aware of things, people, occurrences, and ideas. Judging, includes the processes of coming to conclusions about what has been perceived. Together, perception and judgment, which make up a large portion of people's mental activity, govern much of their outer behavior, because perception-by-definition determines what people see in a situation and their judgment determines what they decide to do about it." (Myers, 1980, p.1).

Jung postulated opposite preferences for perceiving: Sensation (S) and Intuition (N). At any given moment a person will utilize one of the two possible functions. Sensing is a preference for perceiving immediate real solid facts of experience. This function employs all the senses in gathering data. Intuition, on the other hand, is the preference for perceiving meaning and relationships of experience, and possibilities that are beyond the reach of one's senses. All of us use the sensing function and intuition function, but not at the same time. It is basic to the theory, that while we will use both sensing and intuition, we will not use them with equal liking. We prefer one over the other.

The same is true for the two possibilities in the mental processes of judgment: Feeling (F) and Thinking (T). Feeling is defined as a preference for making judgments subjectively and personally, weighing values, and stressing the importance of making choices for oneself and other people. Thinking is a preference for making judgments objectively and impersonally, analyzing facts and ordering them in terms of cause and effect. The person that prefers the feeling function will take into account anything that is important to them, without requiring that it necessarily be logical. A person using the thinking function will usually make judgments logically and impersonally on the basis of cause and effect. (McCaulley and Natter, 1974, p. 105). As with the two preference possibilities for perceiving, we use both feeling and thinking at different times, but will prefer using one over the other.

The kind of perception function you prefer to use, either sensing or intuition, can combine with whatever kind of judgment process, thinking or feeling, that you prefer to use. Therefore, you can have four possible combinations of functions: Sensing-Feeling (SF), Sensing-Thinking (ST), Intuition-Feeling (NF), or Intuition-Thinking (NT). Each of these different

combinations produces a different set of characteristics. These characteristics contribute to such individual differences as values, needs, interests, habits, and surface traits.

Besides the four functions involved with perceiving and judging, Jung describes two major personality attitudes: Extraversion (E) and Introversion (I). These attitudes deal with how one prefers to use the perceiving and judging functions in gathering data. Extraverts prefer to use their functions with the outer world of people and things, while introverts prefer to perceive and judge the inner world of concepts and ideas. Extraverts will tend to be more interested in working actively with people and things, while introverts will be more comfortable when they are involved with ideas that require their activity to take place inside their heads (Myers, 1962). As in the case of the mental functions, we prefer to use one attitude over the other and use only one at a time.

Two additional attitudes which enhance Jung's original theory were added by Isabel Myers, and her mother, Katharine C. Briggs. These attitudes are concerned with the way people enjoy dealing with their outer world. The two preference possibilities are: Judgment (J) and Perception (P). People with a judging preference likes to live in an orderly, planned way. They desire to regulate and control their life. The persons with a perceiving preference enjoys being more spontaneous and flexible. They want to understand life and be able to adapt to events. (Myers, 1962). The nomenclature for this attitude may at first seem somewhat unfortunate, since the central mental functions described in Jung's theory focus on the way one prefers to perceive and judge the world. However, the terms are apropos since this attitude is related to those functions. The Judging-Perceiving (JP) attitude indicates the dominant mental process. For example, if a person has a Perceiving (P)

attitude then their perceiving function (either sensing or intuition) is dominant over their judging function (either thinking or feeling). If, on the other hand, they have a Judging (J) attitude then their judging function (thinking or feeling) is dominant over their perceiving function (sensing or intuition).

The different attitudes can act in combination with themselves and also with the different functions discussed earlier. This means, for example, that a psychological type could result that is described as an extraverted, sensing, feeling, judging (ESFJ) type or possibly an introverted, intuition, thinking, perceiving (INTP) type. A total of 16 possible types can result from the various combinations of the four functions and four attitudes. Each of the 16 types have characteristics unique to that particular type; these characteristics are described in detail in Myers (1962, 1980). Myers and Briggs developed an instrument to measure psychological types. This instrument, the Myers-Briggs Type Indicator (1962), was used in this study.

Although numerous research studies have been reported using the Myers-Briggs Type Indicator as an investigative tool in education, very few have studied school administrators. Essentially, there have been three studies: von Fange, 1961; Wright, 1966; and Morrison, 1980. The central purpose of these studies was to determine the frequency distribution of personality types among the administrators. In all the studies the extraverted, sensing, thinking, judging type (ESTJ) was the predominate type. Almost all the administrators in the three studies were male.

Von Fange's sample of 63 principals in Canada showed ESTJ to be clearly the most common type. Although there was a broader representation among the 66 superintendents that he studied, the majority were of the ESTJ type. Wright (1966) found that the personality of the 39 elementary school

principals that she studied to be primarily of the extraversion, thinking, judging type.

Morrison (1980) found that of the 29 principals that he studied, 83% were judging and 79% were sensing as opposed to perceiving and intuitive. He found that ten times as many principals had the Sensing-Judging (SJ) combination, than the Intuitive-Perceiving (NP) combination.

No research has been located that has investigated the relationship of school principals' personality types to principals' perception of their roles or their behavior. In fact, no studies have been located that relate principal personality types to any organizational processes.

The primary purpose of this study was to investigate the relationship between elementary school principals' psychological types and their perceived problem-solving strategies. In addition to seeking greater understanding about the leadership characteristics of principals, this research also had a general aim of contributing evidence to the construct validity of Jungian typology. The research centered on the functions described by Jung and the following research questions guided the study:

1. Is there a significant difference between Sensing (S) and Intuitive (N) principals' perceived problem-solving strategies?
2. Is there a significant difference between Thinking (T) and Feeling (F) Principals' perceived problem-solving strategies?

Methodology

Sample

Eighty-six elementary school principals from the Chicago and Washington, D.C. suburban areas participated in this study. The sample included 36

principals from two districts in the Chicago area and 30 from one district in the Washington, D.C. area. These principals were invited to be part of the study and their participation was strictly voluntary. The sample was composed of 45 men and 41 women.

Data Collection

The principals were administered the Myers-Briggs Type Indicator, Form F, (MBTI) using the standard instructions. A few weeks after the MBTI was given, the principals were gathered together in their respective districts and were asked by the researcher to respond to the Principal Problem Strategy Questionnaire (PPSQ). After the PPSQ data was collected the principals participated in a workshop to describe and analyze their MBTI results.

Instrumentation

Principal Problem Strategy Questionnaire

The Principal Problem Strategy Questionnaire (PPSQ) is an instrument developed for this research to gather data pertaining to perceived problem solving strategies. The questionnaire contains twelve problem situations that are typical to the elementary school environment. The respondents are asked to describe in their own words what action they would take in each situation.

In order to develop the vignettes, the participants of the Peabody College of Vanderbilt University Principals Institute were asked to identify typical and prominent problem areas that they encountered in the elementary school. The vignettes were then written relative to these problem areas. The resulting vignettes were reviewed by a group of educational administration doctoral students at Peabody for the purposes of clarity and appropriateness. This review resulted in the original list of fifteen vignettes being reduced to twelve. The reasons for this was twofold, first there were three situations that the students felt were very similar to others in the

instrument, and second, it was felt that it was too tiring to respond to all 15 vignettes.

The Myers-Briggs Type Indicator (MBTI)

The Myers-Briggs Type Indicator (MBTI), developed by Isabel Myers and Katharine C. Myers and published in 1962 is reportedly the simplest and most reliable instrument to measure Jungian type. The MBTI is a self-reporting 166-item forced-choice questionnaire (Form F) with questions chosen to represent every day preferences, which in turn, reflect Jung's more basic preferences. The choices do not distinguish between good or bad, right or wrong, but simply ask which of two equally desirable ways to function, a given individual prefers. The MBTI is scored along four preference indices: Extraversion-Introversion (EI), Sensation-Intuition (SN), Thinking-Feeling (TF), and Judgment-Perception (JP). As indicated earlier, the first three preferences are Jungian, while the fourth was added by Myers and Briggs. From the respondent's answers, points for each pole of the preference indices are given and totaled. A "preference score" is then calculated by applying a formula to the difference between the scores on each pole. Since each of the indices lies on a continuum, the magnitude of the preference score indicates the strength of that particular preference. For example, the scores may indicate a very strong preference for intuition over sensing, while indicating little preference of thinking over feeling. Therefore, your preferences are not only exclusive for each indices, but they also indicate how much you prefer one function or attitude over the opposite.

An individual's psychological type is determined by a combination of the four preferences. The resulting psychological type is represented by a configuration of four letters: E or I, S or N, T or F, and J or P. As stated before, sixteen combinations of these letters are possible and each of these sixteen psychological types has its own set of characteristics.

This study was primarily interested in the way principals perceived and made judgments about problems. Therefore, for the purposes of this research only the perceiving functions, Sensation (S) and Intuition (N) and the judging functions, Thinking (T) and Feeling (F) were considered in the data analysis.

Data Analysis

There were two sources of data in this study: Myers-Briggs Type Indicator (MBTI) and the Principal Problem Strategy Questionnaire (PPSQ). The data from the MBTI was scored and tabulated in the usual way.

The data from the PPSQ which was in the form of open-ended answers was organized so that Q-sorts could be run. In order to do this, the answers from the twelve situations were reproduced and a code was placed on the back of the answers indicating the psychological type functions of the respondent. Two sets of coded answers for each of the twelve situations were produced for each respondent: one indicated whether the respondent was a sensing or an intuitive type, and one indicated if the respondent was a feeling or thinking type.

Enough copies of the open-ended answers were made so that two Q-sorts by six novice sorters could be made. The novice sorters were individuals who had limited knowledge and experience with the MBTI. This amounted to the sorters having completed the type indicator and having their results explained to them. Each of the six sorters made two Q-sorts; a sort for sensing versus intuitive characteristics, and one for thinking versus feeling.

During the first run, each sorter was given two cards, one that listed the characteristics of a sensor and one that listed the characteristics of an intuitive. The sorter was also given a copy of the first problem vignette from the PPSQ and a packet containing the coded open-ended answers to question one from all of the respondents. The coding on the back of the answers was

out of the sorter's sight. The sorters were asked to place the answers in two stacks: a stack which would be those answers that the sorter thought were characteristic of a sensor, and one stack that the sorter perceived to be the answers made by an intuitive. After the sorter distributed the answers into the two stacks, the answers were placed into two envelopes. The sorter was then given a copy of the second problem vignette, and a packet of question two answers, and the process was repeated. This process was utilized for all twelve problem situations.

Several days later the sorters were then asked to complete a second Q-sort. This was identical with the first Q-sort except the sorters were given two cards listing the characteristics of thinking and feeling psychological types. The sorters then placed the answers in two stacks according to how they felt the answers corresponded to these characteristics. The list of characteristics describing the sensing, intuitive, thinking and feeling types were taken from two sources: Introduction to Type, fifth printing (Myers, 1981) and Facing Your Type (Schemel and Borbely, 1982).

The data from the Q-sorts were tallied to determine the number of "hits" and "misses." A "hit" was made when a sorter placed an answer in the stack that matched the function code on the back of the answer and a "miss" occurred when there was a mismatch. Hits and misses were figured for all twelve situations for each sorter. Mean scores were then calculated for hits and misses for each question for all six sorters. Calculations were made for each of the two Q-sorts.

To test for significance, a Sign Test for two correlated samples was utilized. This test is applicable to data composed of (N) paired observations. Ferguson (1981) states:

This test compares two correlated samples, and is applicable to data composed of N paired observations. The difference between each pair of observations is obtained.

The Null hypothesis is that the median difference between pairs is 0. The test is based on the idea that under the null hypothesis the expectation is that half the difference between paired observations will be positive and the other half negative (p. 401).

Results

In order to determine if the sample of elementary school principals was fairly representative, a comparison was made between the psychological type distribution of the sample and a "normal" population. The normal population sample was obtained from the data bank at the Center for Applications of Psychological Type (CAPT) in Gainesville, Florida. The type table from this sample of 904 administrators was compared with the type table from this study's sample of 86 principals. The comparison was made using the Selection Ratio Type Table (SRTT) computer program written by J. Allen and R. Kainz of CAPT. The test revealed that there were not significant differences between the two samples. The psychological type distribution and the results of the SRTT are summarized in Table 1.

The first of two Q-sorts was made in order to determine if there was a significant difference between the way the elementary school principals perceived a problem situation. The sorters were asked to separate the open-ended answers according to whether they thought the answer was made by an intuitive or a sensing type respondent. The six sorters were able to separate the answers according to type 85% of the time for the 12 situations. The range of percentages from a low of 78% for questions 5 to a high of 92% for question 9. The Sign test indicated that the resulting z scores for all twelve questions were significant at the .01 level.

In fact, all of the z scores far exceeded the 2.580 that was needed to be significant at the .01 level. The range of z scores was from a low of 3.921 for question 5 to a high of 5.649 for question 11. Data from the S-N Q-sort

and Sign test are summarized in Table 2. It is clear from this data that the sorters were able to distinguish between the perceived problem-solving strategies of sensing and intuitive principals.

The second Q-sort was made in order to determine if there was a difference between the perceived problem-solving strategies of thinking and feeling type principals. In this sort the answers were distributed with 77% accuracy for the 12 situations. The range of percentages was from 67% for question 3 to 85% for question 8. The z scores from the Sign test again indicated that the differences for all twelve questions were significant at the .01 level. The range of z scores was from a low of 2.588 for question 3 (which was just above the 2.580 needed at the .01 level) to a high of 4.293. Table 3 summarizes the data from the T-F Q-sort and Sign test. Again, the data indicates that the perceived problem-solving strategies of thinking and feeling type principals were significantly different.

Discussion

The results of this study clearly support the hypothesis that there is a significant difference between the perceived problem-solving strategies of principals with differing psychological types. The principals in this study overwhelmingly perceived and made judgments about a problem situation according to their psychological type characteristics. Not only do these results have broad implications for understanding of leadership behavior, but the data provide considerable evidence to the construct validity of Jungian typology.

The differences between the perceived problem-solving strategies of the sensing (S) and intuitive (N) principals were striking. The Sensing-Intuitive (S-N) function describes how an individual prefers to perceive the world. With the sorters being able to discriminate between the open-ended answers of

the sensing and intuitive principals 85% of the time it appears that how principals perceive a problem situation depends upon their psychological type. Characteristically, the sensing type principals generally limited their perceptions to the immediate situation utilizing the facts that were given. They tend to follow policy or guidelines if they exist and develop them if they don't.

The intuitive principals, characteristically, perceived the problem situation in broader terms. Their concerns are often school or district-wide and future oriented. They use the facts in the situation to seek possibilities, interconnections and implications. The use of outside sources, research and experts is typical of the intuitives. A sample of some of the answers from one of the situations in the PPSQ illustrate these differences.

One of the problem situations describes a complaint by some parents. One of the teachers, the parents feel, is being too strict with her classroom. They report that the teacher's rules are very rigid and that some of the children are feeling threatened. For this situation the average percentage of "hits" made by the sorter was 90%. The following are some of the sensing principals' responses:

1. Talk to the teacher. Observe for myself and determine if I needed to help her or provide help in classroom management.
2. I'd check out the complaint after getting specific information from parents. I would then decide whether parents were justified. If they were, I'd meet with the teacher. If not, I'd back the teacher.
3. Check out facts. Visit, conference and report with teacher to clear up situation. If more changes are required, then it may be necessary to follow contract. I would get parent complaints in writing, follow set course of action, write up factual report of action taken, stating goals, etc.

Some examples of answers made by intuitive principals are:

1. I would look at many variables, such as which parents are complaining, teacher's background, class size and make up. I would discuss problem with the teacher if complaints are founded.
2. The action I took in such a case was to bring in a group of ex-pupils and have them discuss how much they had learned in that teacher's class and how much her discipline had meant to them.
3. Talk with teacher and learn about her procedures. I would visit classroom and observe the children. If I felt that complaint were true, then I would work with teacher to redefine her expectations. I would explain effectiveness of teacher's system as I have observed. Assure parent that children are receiving good education. Review differences in teaching and learning styles.

The sensing principals in these examples seem to limit their perceptions to the immediate situation. They generally gather specific facts related to the complaint and take action themselves. The intuitive principals report that they look at more underlying facts, variables, and sources. While they, too, perceive they would take action, they were more apt to involve other people and theory to support their actions.

The perceived problem-solving strategies of the thinking (T) and feeling (F) principals were also very different. The Thinking-Feeling (T-F) function describes how an individual prefers to make judgments. Thinking type principals prefer to make decisions in an impersonal, rational, and logical way. They are practical and matter-of-fact in their approach to problem situations; personal warmth and concern for others is secondary to impersonal analysis. These principals value fairness and consistency, and while they sometimes involve others, they often make the decisions themselves or seek a compromise. The feeling type principals, on the other hand, generally placed

personal warmth and concern for others in problem situations over the impersonal analysis of data. They often attempt to involve others in helping themselves, and to involve them in the decision-making process where possible. They characteristically value harmony and are sensitive to conflict reduction through compassion and commitment. They are likely to attempt to reach consensus, or at least a compromise with the intent to reduce conflict.

Some answers given by thinking type principals to the "too rigid teacher" situation described before are as follows:

1. a) listen to the parent; b) observe the staff member and her classroom management; c) make a judgment and be prepared to defend it; d) let the teacher know what your decision is and how it was arrived at.
2. I'd observe the classroom and call the teacher in to discuss the parent calls. If I thought the teacher was too strict, I would tell her to ease-up. If not, I'd explain to the parent that her class is more structured than last year and the children would benefit from such a routine. Maybe these kids need to be threatened:
3. a) review the rules with the teacher and try to get some ideas how she enforces these rules, tell her of concern voiced by parents.
b) observe the class and talk to students; c) conference with the teacher and tell her of your final decision.

The following are some responses made by feeling type principals:

1. Support the teacher and at the same time try to make the parents feel comfortable.
2. Discuss the concerns with the teacher and meet with the parents and teachers. Come to a mutually acceptable resolution.

3. Check the complaints out carefully before bringing the teacher in to discuss not only what has been reported, but also what I've observed.

Discuss steps to improve the situation and periodically check to see that implementation has occurred.

From these examples, the feeling type principals in these examples appear to be more concerned about the feelings of the persons involved than did the thinking type principals. The thinking type principals seem very logical and rational in their approach while the feeling principals' answers reflect more personal warmth.

It should be noted that the feeling and thinking type principals were also either sensing or intuitive types. Therefore, their answers would be expected to reflect both of their functional characteristics. In the case of the sensing type examples, decided previously, all came from Sensing-Thinking (ST) types, however, the second feeling type example listed was made by a Sensing-Feeling (SF) Type. The SF type limited their perceptions to the immediate situation like the ST's, but used a quite different decision-making approach. The SF was much more concerned with the feelings of others, while the ST's were fairly impersonal.

The first two intuitive examples described before were made by Intuitive-Feeling (NF) type principals, whereas, the third example was made by an Intuitive-Thinking (NT) type. All three perceived the problem in fairly broad terms, but the NT's decision-making process was more direct and impersonal than the first two (NF) examples. An attempt was made to separate the answers according to the four possible combinations: Sensation-Thinking (ST), Sensation-Feeling (SF), Intuitive-Thinking (NT), and Intuitive-Feeling (NF) by a third Q-sort. This was not very successful. The overall percentage of hits was 45%. One would speculate that the sorters may have chosen one dominant

characteristic and "carried" the second characteristic to the wrong stack. This seems possible since they were so successful in separating the answers when they were asked to consider just one function at a time.

Because of the open-ended nature of the problem situation questionnaire, it is a reasonable assumption that the perceived strategies reported by the principals are probably typical of the actual strategies used by the principals in their schools. If this assumption is true, then the results would indicate that psychological type is a major determinant of leader behavior. Since the principals' perceived problem-solving strategies were characteristic of their psychological type, the results support Wayson's (1974) contention that leadership behavior is facilitated or retarded by personality factors. Not only do these results clearly support the construct validity of the Jungian typology, they also provide empirical evidence that indicates the impact personality characteristics have on leader behavior.

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TABLE 1

ELEMENTARY SCHOOL PRINCIPAL TYPE TABLE

N = 86

I = Selection Ratio Comparison to CAPT'S
School Administrator Sample

Sensing Types		Intuitive Types						
With Thinking	With Feeling	With Feeling	With Thinking					
<u>ISTJ</u>	<u>ISFJ</u>	<u>INFJ</u>	<u>INTJ</u>					
N = 8	N = 7	N = 3	N = 6	J	E	N	Z	I
Z = 9.30	Z = 8.14	Z = 3.49	Z = 6.98	U	I	51	59.30	1.00
I = 0.79	I = 1.07	I = 0.93	I = 1.26	D	S	35	40.70	1.00
				G	N	44	51.16	0.97
				I	T	42	48.84	1.03
				N	F	41	47.67	0.98
				G	J	45	52.33	1.02
<u>ISTP</u>	<u>ISFP</u>	<u>INFP</u>	<u>INTP</u>	T	P	64	74.42	1.07
N = 2	N = 3	N = 4	N = 2	R	J	22	25.58	0.84
Z = 2.33	Z = 3.49	Z = 4.65	Z = 2.33	O	LJ	24	27.91	0.97
I = 1.40	I = 1.37	I = 0.84	I = 1.05	V	IP	11	12.79	1.07
				E	EP	11	12.79	0.69
				P	EJ	40	46.51	1.14
				E	S	22	25.58	0.89
				R	SF	22	25.58	1.07
				C	NF	23	26.74	0.98
				E	NT	19	22.09	1.10
<u>ESTP</u>	<u>ESFP</u>	<u>ENFP</u>	<u>ENIP</u>	P	SJ	35	40.70	0.94
N = 2	N = 2	N = 7	N = 0	T	SP	9	10.47	1.11
Z = 2.33	Z = 2.33	Z = 8.14	Z = 0.00	I	NP	13	15.12	0.72
I = 0.91	I = 0.88	I = 0.85	I = 0.00	V	NJ	29	33.72	1.29
				E	TJ	35	40.70	1.05
<u>ESTJ</u>	<u>ESFJ</u>	<u>ENFJ</u>	<u>ENTJ</u>	X	TP	6	6.98	0.69
N = 10	N = 10	N = 9	N = 11	T	FP	16	18.60	0.91
Z = 11.63	Z = 11.63	Z = 10.47	Z = 12.79	R	FJ	29	33.72	1.10
I = 0.90	I = 1.05	I = 1.26	I = 1.48	O	IN	15	17.44	1.02
				V	EN	27	31.40	1.04
				J	IS	20	23.26	0.99
				U	ES	24	27.91	0.96
				D				
				G				
				I				
				N				
				G				

No significant difference indicated by chi-square or Fisher's Exact Test

TABLE 2

Statistics From Sensing/Intuitive Q-sort

Question	Mean Number of Hits	Mean Number of Misses	Percentage of Hits	z Score
1	40.50	7.50	.84	4.58
2	43.33	8.66	.83	4.67
3	44.17	7.83	.85	4.90
4	40.33	10.66	.79	4.02
5	40.00	11.00	.78	3.92
6	43.17	7.83	.85	4.81
7	40.83	10.17	.80	4.15
8	39.67	4.23	.90	5.19
9	45.00	4.00	.92	5.71
10	44.83	6.17	.88	5.27
11	46.17	4.83	.91	5.65
12	38.67	7.23	.84	4.49

TABLE 3

Statistics From Thinking/Feeling Q-sort

Question	Mean Number Of Hits	Mean Number of Misses	Percentage of Hits	z Score
1	36.67	14.33	.72	2.99
2	36.50	15.50	.70	2.77
3	34.83	15.17	.67	2.59
4	39.33	10.66	.79	3.91
5	40.33	10.66	.79	4.02
6	38.50	11.50	.77	3.68
7	38.67	11.33	.77	3.73
8	37.17	6.83	.85	4.42
9	39.00	10.00	.80	4.00
10	41.33	9.67	.81	4.29
11	40.50	9.50	.81	4.24
12	35.55	9.45	.79	3.18